

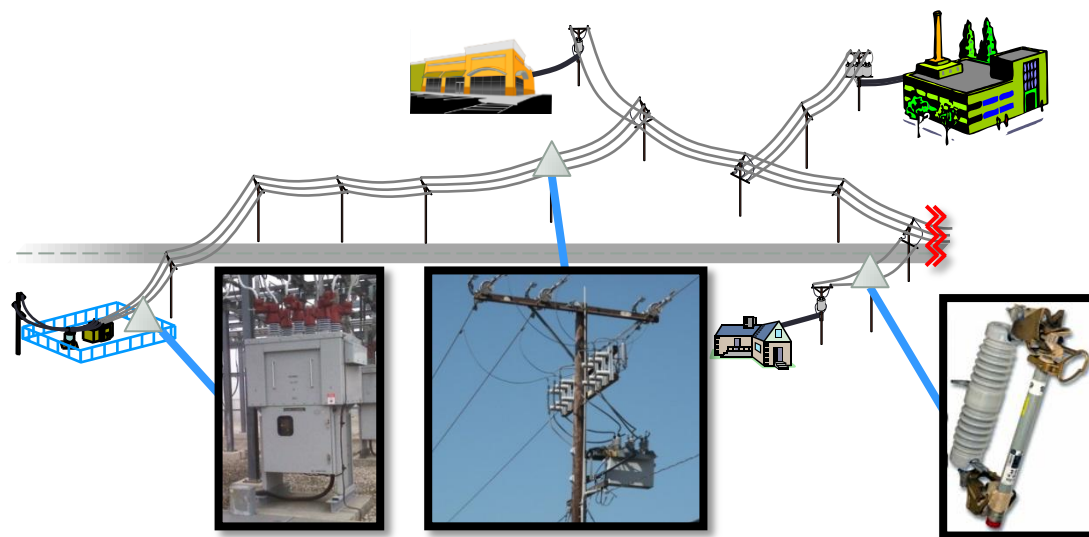
# AB 327 DISTRIBUTION RESOURCES PLAN OVERVIEW

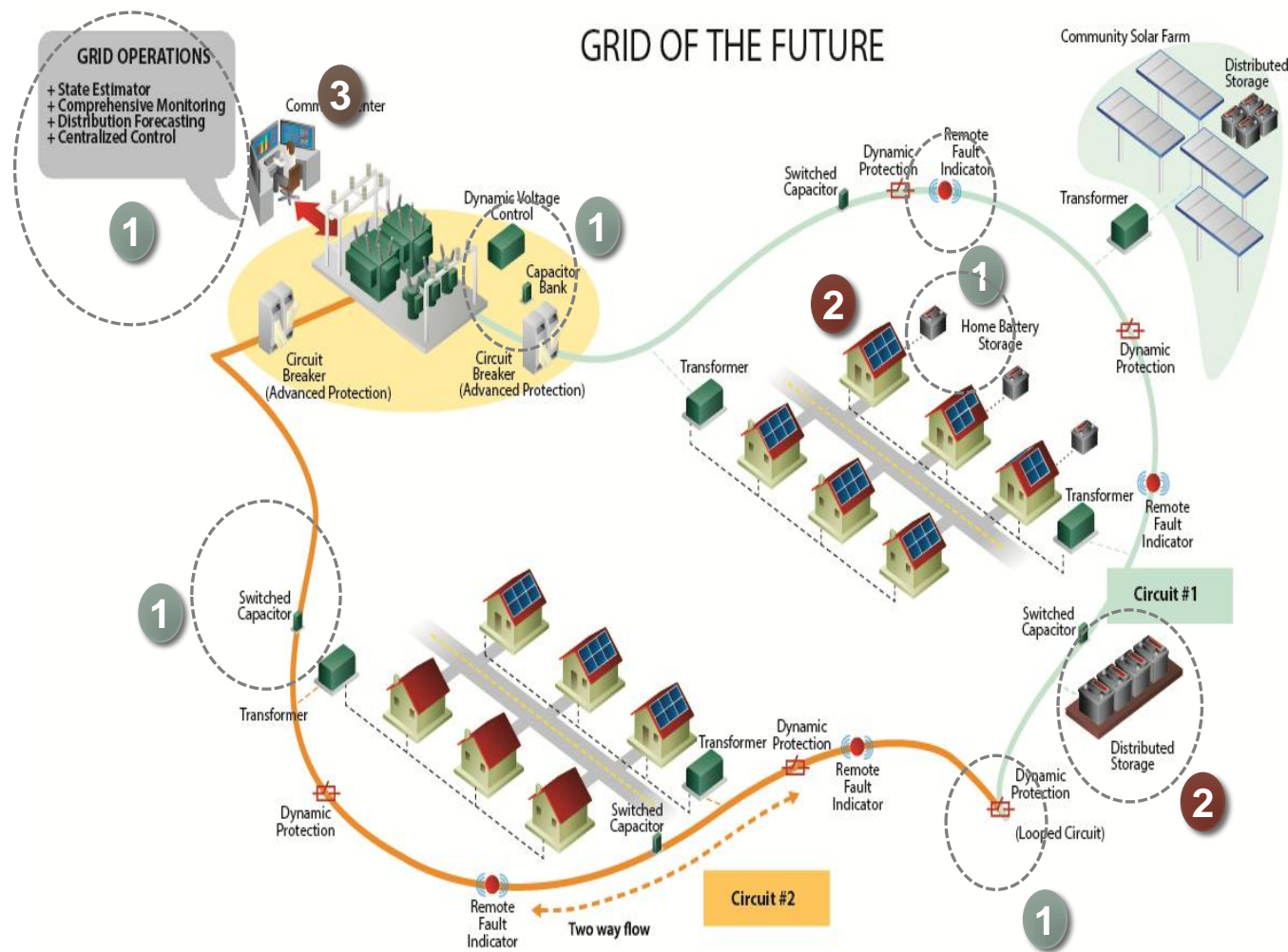
---

Erik Takayesu  
Southern California Edison

# Distribution Resources Plan Objectives

- Safety
- Reliability
- Affordability





## Future state based on evolving energy landscape

- 1** More automated and digital, with more sophisticated voltage control and protection schemes
- 2** Facilitates increasing renewables & two-way power flow with plug and play environment
- 3** Cyber mitigation must be included

- Seamless integration of renewable technologies to support a plug and play environment
- Modernize planning, design, and operations and facilitate
- Interoperability between distributed energy resources, utility equipment, and customers.
- Increase investments in monitoring, control, and communication systems in the longer term.
- Utilize AB 327 and the DRP to prepare for transformative changes to planning processes and supporting investment strategies.

# Planning Enhancements: Optimal Locations

**Strategically-sited Distributed Energy Resources can provide additional value to the grid.**

- AB 327 requires submittal of a distribution resource plan proposal to identify optimal locations for the deployment of distributed resources
- Existing public interconnection maps (Fig. 1) will be refined and expanded to better facilitate strategic project siting
- New layers may provide data on potential system benefits, future projects to alleviate constrained areas, etc.
- Incorporation of data from DERs to enhance interconnection and planning processes to further support plug and play environment

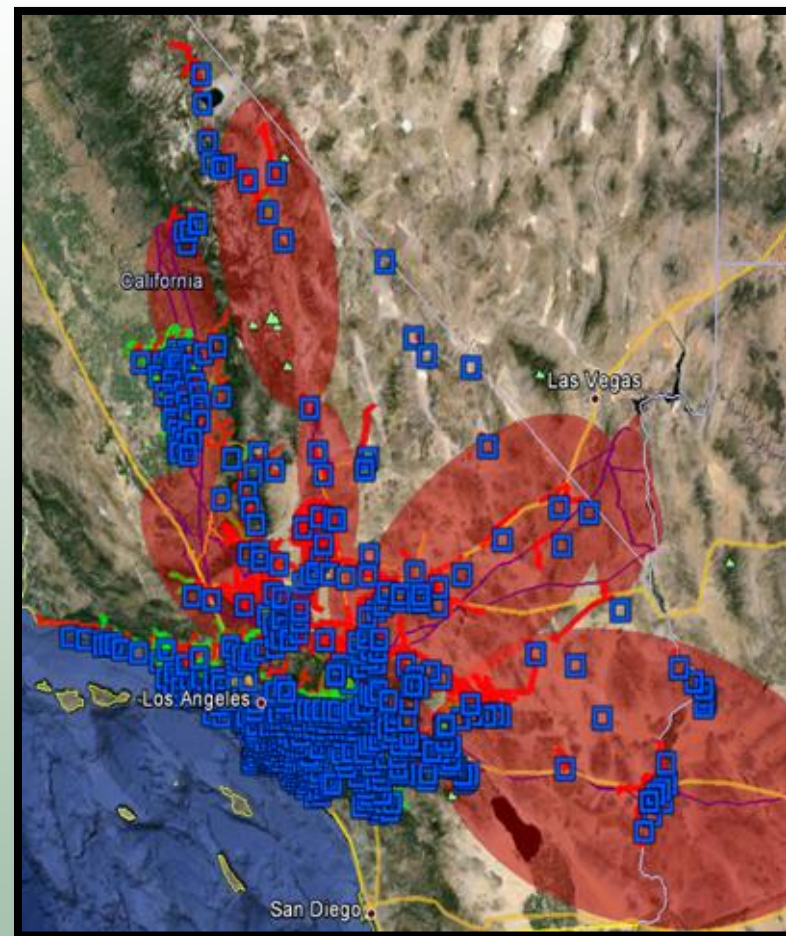
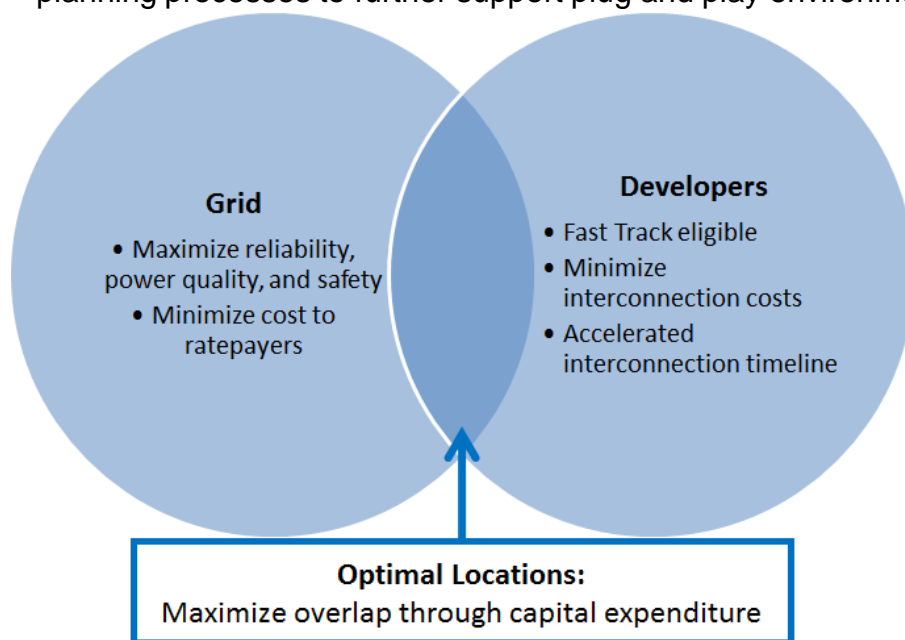


Figure 1: Interconnection Map Overview

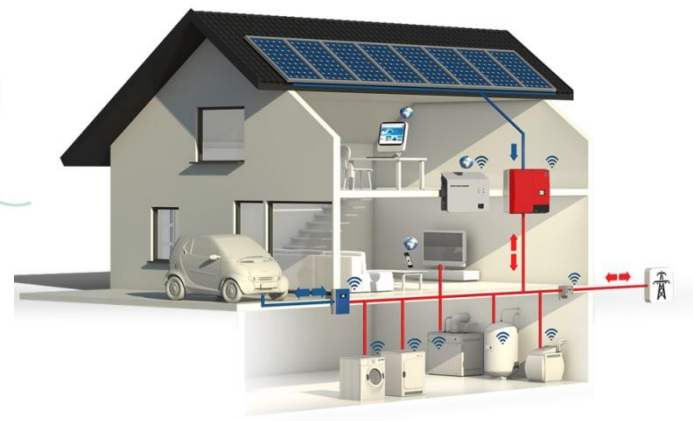


# Distribution Planning Enhancements

- Load forecasting methods and tools to model variable behavior
  - Optimal locations with high penetration
  - Reduce complexity and facilitate seamless integration of distributed resources to promote a more plug and play environment
  - Preserves planning process for short term reliability projects
  - Feeds into transmission planning processes
- Impact to grid operations
  - Feeds into distribution planning process
  - Output of planning process with greater impact to real time operations
- Incorporate DER performance into reliability assessment
  - Ensure reliability is maintained or improved
  - Model variability of distributed resources
  - Requires grid capacity that integrates bi-directional power flow

# Initial Least Regrets Investments

- Provide for visibility, monitoring, and control to support reliability
- Represents modification to existing programs
  - Automation
  - Grid devices
  - Communication systems
  - Circuit capacity and topology
- Supports state policy objectives
  - Storage mandate, DG
  - New planning tools and interconnection process improvements
- Enhancements to grid planning and operations



# Distribution Resources Plan Success Measures

- Comprehensive and achievable milestones
- Supports continuing evolution towards a more integrated end state that preserves safety and reliability
- Efficient alignment of related current and future initiatives
- Framework to support needed investments

The future will depend on **balancing** procurement needs, distribution and transmission reliability, and supporting future markets that **benefit all consumers** through a combination of **least regrets investments** and **new technologies**.